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THE ROLE OF THE UNITED STATES PUBLIC HEALTH SERVICE IN AIR POLLUTION

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Robert A. Taft Sanitary Engineering Center, Cincinnati, Ohio

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U. S. DEPARTMENT OF

HEALTH, EDUCATION, AND WELFARE

Public Health Service
Robert A. Taft Sanitary Engineering Center
Cincinnati, Ohio

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THE ROLE OF THE UNITED STATES PUBLIC HEALTH SERVICE IN AIR POLLUTION

Abstract

The organization of the Public Health Service is described, with particular reference to those parts of the Service most concerned with air pollution. These are, specifically, the Public Health Service Regional Organization, the Division of Special Health Services, and the Division of Sanitary Engineering Services. The responsibility of the latter division in this field is discussed in detail. This responsibility is primarily assigned to the Air Pollution Control Program at the Robert A. Taft Sanitary Engineering Center in Cincinnati, Ohio. The present air pollution activities of the Center include the assignment of staff to the California Department of Public Health to assist in drafting the initial report of its Air Pollution Study Project and in its Air Pollution Control Planning; the National Air Sampling Network, comprising 30 sampling areas in the United States and Alaska, at each of which at least one 24-hour sample is collected each week on fibre glass filters; a study of smoke, fume, and lint from cotton-gin operation; a statistical correlation of mortality data from Cincinnati with weather and air pollution data; development of analytical techniques; and the conduct of a Conference on the Organization and Administration of State Air Pollution Control Programs, to be held at the Taft Sanitary Engineering Center in Cincinnati on September 20-21, 1955.

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Since many air pollution control officials are unfamiliar with the make-up of the Department of Health, Education, and Welfare and of the Public Health Service, advantage will be taken of this opportunity to explain their organizational structures.

The Department of Health, Education, and Welfare is, as you know, the newest of Federal departments. Its principal components are: the Social Security Administration, the Food and Drug Administration, the Office of Vocational Rehabilitation, the Office of Education, and the Public Health Service. Of these, the Public Health Service has the longest history, having been founded in 1789, and having had more than a century of affiliation with the Treasury Department prior to its transfer in 1939 to the Federal Security Agency.

To carry out its mission, the Public Health Service employs about 15,000 full-time personnel, representing over 250 occupational specialties and including many health and related professions. Of these, about 2,500 are officers of the Public Health Service Commissioned Corps, and 12,500 are career Civil Service employees. The Commissioned Corps, a long established quasi-military career organization, includes many of the health professional personnel of the Service, such as physicians, dentists, sanitary engineers, nurses, and others. Commissioned officers undertake their careers in the Service early in their professional lives and, like officers in the Armed Forces, are commissioned in rank by the President, with the approval of the Senate. In addition to the active Regular and Reserve Corps components, there is an inactive Reserve Corps of about 1,400 officers who can be called to duty in case of emergency.

As presently organized, the Service consists of four major operating bureaus, all under the direction of the Surgeon General. These are:

I. Office of the Surgeon General -- This consists of the Divisions of Public Health Methods, Administrative Services, Personnel and Finance. In general, it provides the major staff services to the other three operating bureaus.

II. The National Institutes of Health — These comprise a Division of Research Grants, and the following seven National Institutes: Athritis and Metabolic Diseases, Cancer, Dental Research, Heart, Mental Health, Microbiological, and Neurological Diseases and Blindness. These institutes are largely grouped around a clinical center in Bethesda, Maryland, and spearhead research on the causes and cures of almost the entire gamut of the diseases of man.

III. The Bureau of Medical Services -- Here are grouped the basic medical services on which the Service was first founded. It administers medical care programs in a dozen Federal agencies, such as the United States Coast Guard and the Bureau of Indian Affairs. Its other operations are best described by the names of its six operating divisions, namely: Hospitals, Hospital Facilities, Foreign Quarantine, Dental Resources, Nursing Resources, and Administrative Management.

IV. The Bureau of State Services — This is the bureau of greatest concern to those interested in community air pollution, because in it are grouped most of the Public Health Service's air pollution activities.

Under the direction of a Bureau Chief, who is also an Assistant Surgeon General, there are in the Bureau seven divisions, only two of which operate in fields not directly concerned with air pollution. They are the Divisions of Dental Public Health and of International Health.

Two other of the divisions have a somewhat greater interest in the problem, namely, the Division of General Health Services and the Communicable Disease Center. However, it is the remaining three divisions of the Bureau of State Services that will be actively working with States, municipalities, and industry on community air pollution problems. These are the Public Health Service Regional Organization, the Division of Special Health Services, and the Division of Sanitary Engineering Services.

Public Health Services Regional Organization

Since the Public Health Service operates mainly with and through appropriate State agencies, its regional organization provides the means for States and their municipalities to deal directly with Regional Medical Directors and Regional Sanitary Engineers. There are 8 such regions in the United States, with headquarters at Atlanta, Chicago, Dallas, Denver, Kansas City, New York, San Francisco and Washington.

No operation of the Service in a region is undertaken without the participation, cooperation, and knowledge of the Regional Office involved. This does not preclude direct contact between the central program operations in Cincinnati and Washington and our colleagues in the field, and vice versa. Rather, it facilitates these contacts by limiting them to those that are really necessary.

Division of Special Health Services

This division, in general, plans, conducts, promotes, and coordinates comprehensive Nation-wide personal health and health maintenance programs for the prevention and control of chronic, heart, occupational, and venereal diseases, and tuberculosis. Its occupational disease prevention program is the present successor to the division responsible for Public Health Bulletin No. 306, entitled "Air Pollution in Donora, Pennsylvania — Epidemiology of the Unusual Smog Episode of October 1948." Its staff has, over the past several decades, developed much of the basic instrumentation and the analytical and interpretive techniques for assessing the amount and composition of airborne dusts, gases, and fumes in factories. Many of these methods and devices have been adopted for the study of community air pollution problems.

The future role of the Division of Special Health Services in the Air Pollution Program is to take responsibility for research into the effects of air pollution upon human health. This will involve research in four broad medical areas:

(1) the epidemiology of air pollution;

(2) the physiology and pathology of air pollution;

(3) the toxicology of air pollution;

(4) the psychology of air pollution.

This research will, we hope, tell us whether we need to intensify our control efforts to avert damage to the Nation's health, or whether what we have been and are doing to control obvious pollution to allow our citizens comfortable enjoyment of their homes, work places, schools, and recreation areas has been good enough to have averted any such unfortunate result.

Division of Sanitary Engineering Services

This division plans, conducts, and coordinates National programs in the field of sanitary engineering, such as milk and food sanitation, water pollution control, radiological health, interstate carrier sanitation, etc. Not long after the dedication of the Robert A. Taft Sanitary Engineering Center in Cincinnati in April 1954, an Air Pollution Program was added to these other National programs, and responsibility was given to the Center to develop and administer the program.

This responsibility has been set forth in detail in the following Service directive, which is quoted verbatim:

> "Primary responsibility is hereby assigned to the Division of Sanitary Engineering Services for operations concerned with the sources, extent, physical behavior effects, prevention, and control of community air pollution. This responsibility includes (a) physical and chemical measurement, identification, and tracing of air pollutants; (b) design, testing, and development of methods and devices for such measurement; (c) study of the complicated chemical inter-reactions of air pollutants; (d) development of methods and devices for controlling or preventing the introduction of air pollutants into the atmosphere; and

(e) provision of technical guidance and consultation to States and communities in establishing and operating community air pollution control programs, including development of such standards, codes, and ordinances as may be required."

In addition to this general responsibility, the Division has a special assignment from the State Department, namely, directing and conducting, for the Technical Advisory Board on Air Pollution of the International Joint Commission, the study of air pollution along the Detroit River. That study is now in its fifth year. The Chairman of the United States Section of the Technical Advisory Board is a Public Health Service officer associated with the Air Pollution Program of the Robert A. Taft Sanitary Engineering Center. One annual report of this activity was prepared last month, and another report is currently in the process of preparation.

Coordination of Public Health Service Programs

In order to coordinate these various Public Health Service efforts, an Intra-Departmental Coordinating Committee has been set up. This should not be confused with the Inter-Departmental Committee, representing the Atomic Energy Commission, the National Science Foundation, and the Departments of Agriculture, Commerce, Defense, Health, Education, and Welfare, and Interior, which has been meeting to delineate the roles of the respective departments and agencies in the problem.

The areas for intra-departmental coordination include the operation by the same staff of the animal and toxicological facilities at the Taft Sanitary Engineering Center and the Occupational Health Field Headquarters, both of which are in Cincinnati, although about six miles apart. Such coordination also includes joint participation in epidemiological studies, so that a team from the Air Pollution Program of the Sanitary Engineering Center can provide the environmental and other non medical data necessary to correlate with the clinical and medical laboratory findings of their opposite numbers in an equivalent Special Health Services team.

Present Public Health Service Activity

The fiscal year ending June 30, 1955, is the first in which Congress has specifically earmarked Federal funds for air pollution. This has resulted in two major commitments and several minor ones. One of the major commitments has been the assignment of staff to the California Department of Public Health, to assist in drafting the initial report of its Air Pollution Study Project and in its air pollution control planning.

National Air Sampling Network

The other major activity has been the development of the National Air Sampling Network, which has now been in operation for about a year and a half. The network now comprises 30 sampling areas in the United States and Alaska. The sites have been selected on the basis of geography, industrial activity, and other considerations. At each site,

the particulates are collected both in a central part of the city and in a suburban or rural area, to delineate the exotic contribution of the central pollutional complex. At least one 24-hour sample is collected each week at each location. A few cities have more intensive sampling programs.

The particulate matter collected in the field on fibre glass filters is transported to the Robert A. Taft Sanitary Engineering Center for examination. The concentrations of total particulate matter collected, organic matter extractable by acetone, and radioactivity are determined on all samples. Further studies of the mineral content of the particulate matter of samples have been carried out by the Kettering Institute, which is currently collaborating in this survey. Some of the organic matter has also been examined for polycyclic hydrocarbons.

Some of the findings of the network are being reported to your Association in the first session tomorrow afternoon, in a paper by Dr. Leslie A. Chambers, Director of Research of the Robert A. Taft Sanitary Engineering Center, entitled "The Characteristics and Distribution of Organic Substances in the Air of Some American Cities."

In order to make the future network operation of most use to States and communities in the assessment and guidance of their local control programs, a conference of participating cities, or communities which operate their own independent local networks, and of all others interested in the problem of what such a network should be and do has been called by the Sanitary Engineering Center for tomorrow evening, Tuesday, May 24, at 7:30 p.m., in the Pan-American Room of the Sheraton Cadillac Hotel.

The time and place of the conference were chosen after consultation with officials of your Association, and we wish to acknowledge and thank you for your splendid cooperation in this matter.

Other Program Activities

Four State health departments have, within the past year, requested Public Health Service assistance in finding ways to alleviate the smoke, fume, and lint from cotton-gin operation. Here is a problem which, because it involves a marketable crop, is of interest to the Department of Agriculture, and, because it involves incineration, is of interest to the Bureau of Mines. It, therefore, makes an excellent proving ground for Federal-State-Industry interagency cooperation. We, in the Air Pollution Program at the Robert A. Taft Sanitary Engineering Center, view our role as that of a coordinating agency. Because we believe that other Federal and State agencies expect us to take the initiative in such situations, we called and held a conference last Monday and Tuesday, May 16 and 17, at Greenville, Mississippi, and took the initial steps toward a joint Government-Industry attack on the problem.

To fill in the picture, brief mention should be made of the other work in progress, namely: (1) A statisitical correlation of mortality data from Cincinnati with weather and air pollution data, (2) development of a continuous measuring device for the carbon content of the atmosphere, (3) development of analytical techniques for the separation of the organic constituents of solvent extracts from airborne particulate matter, and (4) detailed planning of program and research for the fiscal year 1955-56.

Conference of States and Communities

Both the Federal Government and the municipalities are creatures of the 48 states. Because of this, the normal channels of communication between Federal agencies and municipalities are through the respective State governments. In recognition of this fact, the Sanitary Engineering Center's first need is to strengthen these communication channels. To accomplish this, a Conference on the Organization and Administration of State Air Pollution Control Programs has been called at the Robert A. Taft Sanitary Engineering Center in Cincinnati for September 20-21, 1955. To it are being invited representatives of the States and Territories, of all County Air Pollution Control programs, and of the Air Pollution Control programs of all cities of over 500,000 population. The topics to be discussed fall into four categories. A half-day will be devoted to each. These categories are:

General Introduction to Problem

Local Air Pollution Control

State Air Pollution Control

Organizational Requirements

State, county, and municipal officials have been consulted on the planning of this conference, and will participate in its conduct.

Conclusion

It is hoped that this explanation of the Public Health Service and its air pollution activities will convince you that Federal, State, and Local air pollution interests are in no way antagonistic to each other, and that there is a broad area for mutual cooperation of all concerned with the problem.